

REMARKS

Claims 19-24, 35 and 38-48 are pending. By this Amendment, claims 38-48 are added and withdrawn, non-elected claims 1-18, 25-34, 36 and 37 are cancelled without prejudice to or disclaimer of the subject matter recited therein. Applicants reserve the right to file one or more divisional applications to pursue the subject matter of the cancelled claims.

Newly-added dependent claims 38-42 are method claims depending from claim 35 and based upon original claims 20-24. Newly-added claims 43-48 is a second set of apparatus and method claims based upon original claims 19-21, 23 and 35. Thus, no new matter is added by the above amendments.

I. September 7, 2004 Information Disclosure Statement

Applicants filed an Information Disclosure Statement on September 7, 2004 forwarding a foreign search report and references cited therein. The Examiner is requested to consider the references submitted with the search report.

II. All Pending Claims are Allowable

Claims 19-24 and 35 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,377,654 to LoRusso et al. This rejection is respectfully traversed.

Independent claims 19 and 35 recite that a variation among the plurality of cylinders is reduced "on the basis of an operation angle of an intake valve of each of the cylinders." LoRusso et al. does not disclose or suggest such a feature. That is, LoRusso et al. does not control anything based on an operation angle of an intake valve of the cylinders.

In LoRusso et al., an airflow (air-fuel ratio) variation among the cylinders is minimized using a correlation between a sampled exhaust gas oxygen sensor and "corresponding combustion events." See, for example, the Abstract and col. 5, lines 54-59 of LoRusso et al. In particular, in order to obtain the average desired fuel charge (fd) among the cylinders and the individual variation of valve lift needed between the cylinders (t), a

corrective factor is correlated to the average air-fuel ratio deviation from a stoichiometric air-fuel ratio. See, for example, col. 5, lines 40-44, and generally col. 5, line 25 - col. 6, line 23. While LoRusso et al. concurrently determines the average desired fuel charge and the individual desired deviation in valve lift between the cylinders (see col. 5, lines 51-53), this does not correspond to what is recited in independent claims 19 and 35 of Applicants' application. That is, the process of LoRusso et al. does not reduce a variation among the plurality of cylinders on the basis of an operation angle of an intake valve.

In LoRusso et al., as detailed above, the corrective factor for reducing the variation among the cylinders is determined using only the correlation between the corrective factor and the average air-fuel ratio deviation from the stoichiometric air-fuel ratio. LoRusso et al. does not disclose or suggest that the amount of correction for reducing the variation among the cylinders is determined based on any relationship between a correction coefficient and the operation angle of the intake valve.

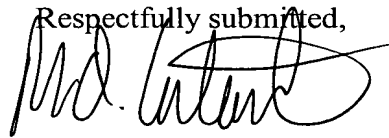
As described, for example, in connection with Figs. 19 and 21, and as described, for example, in paragraphs [0117]-[0123] of Applicants' specification, the operation angle of the intake valve is considered in determining how to reduce variation among the plurality of cylinders. As more specifically recited in new independent claims 43 and 46 (as well as in dependent claims 23 and 41), a correction coefficient is calculated, a relationship between the calculated correction coefficient and the operation angle of the intake valve is calculated, and then the correction coefficient is updated when the operation angle of the intake valve is changed based upon the calculated relationship. LoRusso et al. does not disclose or suggest such a process for selecting a correction coefficient in order to reduce a variation among the plurality of cylinders.

III. Conclusion

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Mario A. Costantino
Registration No. 33,565

JAO:MAC/ccs

Date: November 24, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
